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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,441	03/01/2004	Sang Kyoon Hyun	CISCP854	3445

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Cindy S. Kaplan
P.O. BOX 2448
SARATOGA, CA 95070

EXAMINER	
HO, HUY C	
ART UNIT	**PAPER NUMBER**
2617	

MAIL DATE	DELIVERY MODE
11/24/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/791,441	HYUN ET AL.	
	Examiner	Art Unit	
	HUY C. HO	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 September 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,5-10,14-24 and 26-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,5-10,14-24 and 26-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03/01/2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 09/08/2009 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 5-10, 14-24 and 26-28 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a

later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. **Claims 1, 5-10, 14-24 and 26-28** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Young et al. (US Patent 6,965,942)** in view of **Eatherton (US Patent 6,697,382).**

Consider claim 1, (Currently Amended) Young discloses a method for operating a point-to-multipoint wireless communication network *(see Young, the abstract, col 1 lines 10-65)*, said method comprising:

measuring delays between a root bridge and a plurality of non-root bridges (*Young, the abstract, , col 2 lines 30-48, col 5 lines 4-9, , col 10 lines 45-67, col 11 lines 1-3, 802.11 DCF mechanism monitoring overall network conditions of number of transmissions, receptions, collisions in a wireless LAN);*

using said measured delays to coordinate transmissions in a CSMA/CA scheme *(Young, col 1 lines 55-67, col 2 lines 1-67, col 6 lines 50-67, col 7 lines 1-5);*

distributing said measured delays and time slot value <u>to said non-root bridges </u>within said point-to-multipoint wireless communication network (*Young, col 2 lines 35-45, col 4 lines 60-67, col 5 lines 25-35*); and

aligning contention timing boundaries based on said measured delays to coordinate transmissions and reduce the probability of collision in a carrier-sense multiple access with collision avoidance scheme (*Young, col 1 lines 35-67, col 2 lines 1-15, col 6 lines 50-67, col 9 lines 1-20, a contention window is adjusted based on monitored variables of load conditions of a network);*

<u>wherein aligning contention timing boundaries comprises adjusting a network allocation vector</u> *(Young, col 8 lines 12-26).*

Young does not teach link delays or a common time value. Eatherton teaches a master component distributes and synchronizes a common time value to various components so these slave components update their respective time counters based on received time counters and time delays between the slave components and the master components (see Eatherton, col 3 lines 58-67, col 4 lines

1-6), therefore it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify teachings of Young by incorporating teachings of Eatherton to improve the time synchronization for different slave components in a data packet distribution network taught by Eatherton (see Eatherton, col 1 lines 13-65).

Consider claim 8, (Currently Amended) Young discloses method for operating a node in a point-to-multipoint wireless communication network (*see Young, the abstract, col 1 lines 10-65*), said method comprising:

receiving a measured delay and a system slot time from another node (*Young, the abstract, col 2 lines 30-48, col 5 lines 4-9, , col 10 lines 45-67, col 11 lines 1-3, 802.11 DCF mechanism monitoring overall network conditions of number of transmissions, receptions, collisions in a wireless LAN)*;

using said measured delay and said system slot time to coordinate transmissions and reduce the probability of collision in a Carrier Sense Multiple Access with Collision Avoidance (CSMA/CA) scheme (*Young, col 1 lines 55-64, col 2 lines 30-48, col 6 lines 50-67, col 7 lines 1-5, col 10 lines 45-67, col 11 lines 1-3)*, wherein coordinating transmissions comprises aligning contention timing boundaries, said contention timing boundaries comprises adjusting a network allocation vector (*Young, col 8 lines 12-26)*.

Young does not teach link delays or a common time value. Eatherton teaches a master component distributes and synchronizes a common time value to various components so these slave components update their respective time counters based on received time counters and time delays between the slave components and the master components (*see Eatherton, col 3 lines 58-67, col 4 lines 1-6)*, therefore it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify teachings of Young by incorporating teachings of Eatherton to improve the time synchronization for different slave components in a data packet distribution network taught by Eatherton (*see Eatherton, col 1 lines 13-65)*.

Consider claim 9, (Currently Amended) Young discloses a method for operating a point-to-multipoint wireless communication network (*see Young, the abstract, col 1 lines 10-65*), said method comprising:

measuring delays between an access point and a plurality of stations (*Young, the abstract, , col 2 lines 30-48, col 5 lines 4-9, , col 10 lines 45-67, col 11 lines 1-3, 802.11 DCF mechanism monitoring overall network conditions of number of transmissions, receptions, collisions in a wireless LAN);*

using said measured delays to coordinate transmissions and reduce the probability of collision in a <u>Carrier Sense Multiple Access with Collision Avoidance</u> CSMA/CA scheme (*see Young, col 1 lines 55-64, col 2 lines 30-48, col 6 lines 50-67, col 7 lines 1-5, col 10 lines 45-67, col 11 lines 1-3);*

wherein distributing said measured delays and time slot value within said point-to-multipoint wireless communication network (*Young, col 2 lines 35-45, col 4 lines 60-67, col 5 lines 25-35*); and

aligning contention timing boundaries based on said measured link delays (*Young, col 4 lines 25-45, col 8 lines 55-67, col 9 lines 10-20, col 10 lines 1-40*), <u>wherein aligning contention boundaries comprises adjusting a network allocation vector (</u>*Young, col 8 lines 12-26).*

Young does not teach link delays or a common time value. Eatherton teaches a master component distributes and synchronizes a common time value to various components so these slave components update their respective time counters based on received time counters and time delays between the slave components and the master components (*see Eatherton, col 3 lines 58-67, col 4 lines 1-6),* therefore it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify teachings of Young by incorporating teachings of Eatherton to improve the time synchronization for different slave components in a data packet distribution network taught by Eatherton (*see Eatherton, col 1 lines 13-65).*

Consider claim 10, (Currently Amended) Young discloses an apparatus for operating node in a point-to-multipoint wireless communication network (*see the abstract),* said apparatus comprising:

a delay counter that measures delays between a root bridge and plurality of non-root bridges (*Young, the abstract, col 2 lines 30-48, col 5 lines 4-9, col 7 lines 35-45, 802.11 DCF mechanism monitoring overall network conditions of number of transmissions, receptions, collisions in a wireless LAN);*

a MAC processor that calculates time slot value based on said measured delay, distributes said measured delays within said point-to-multipoint wireless communication network (*Young, col 2 lines 35-45, col 4 lines 60-67, col 5 lines 25-35*), uses said measured delays to coordinate transmissions and reduce the probability of collision in a CSMA/CA scheme (*Young, figure 2, col 1 lines 35-40, col 5 lines 35-40, 50-67)*, and aligns contention timing boundaries based on said measured delays (*Young, col 1 lines 35-67, col 2 lines 1-15, col 6 lines 50-67, col 9 lines 1-20, a contention window is adjusted based on monitored variables of load conditions of a network)*, <u>said contention timing boundaries comprises adjusting a network allocation vector (</u>*Young, col 8 lines 12-26)*.

Young does not teach link delays or a common time value. Eatherton teaches a master component distributes and synchronizes a common time value to various components so these slave components update their respective time counters based on received time counters and time delays between the slave components and the master components (see Eatherton, col 3 lines 58-67, col 4 lines 1-6), therefore it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify teachings of Young by incorporating teachings of Eatherton to improve the time synchronization for different slave components in a data packet distribution network taught by Eatherton (see Eatherton, col 1 lines 13-65).

Consider claim 17, (Currently Amended) Young discloses apparatus for operating a node in a point-to-multipoint wireless communication network (*see the abstract*), said apparatus comprising:

a physical layer block that receives a measured delay and a system slot time from another node (*Young, the abstract, col 2 lines 30-48, col 5 lines 4-9, , col 10 lines 45-67, col 11 lines 1-3, 802.11 DCF mechanism monitoring overall network conditions of number of transmissions, receptions, collisions in a wireless LAN*); and

a MAC layer processor that uses aid measured delay and said system slot time to coordinate transmissions and reduce the probability of collision in a CSMA/CA scheme (*Young, col 2 lines 35-45, col 4 lines 60-67, col 5 lines 25-35*), wherein contention timing boundaries are aligned based on said measured delay and said slot time (*Young, col 1 lines 35-67, col 2 lines 1-15, col 6 lines 50-67, col 9 lines 1-20, a contention window is adjusted based on monitored variables of load conditions of a*

network), <u>said contention timing boundaries comprises adjusting a network allocation vector (</u>*Young, col 8 lines 12-26).*

Young does not teach link delays or a common time value. Eatherton teaches a master component distributes and synchronizes a common time value to various components so these slave components update their respective time counters based on received time counters and time delays between the slave components and the master components (*see Eatherton, col 3 lines 58-67, col 4 lines 1-6),* therefore it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify teachings of Young by incorporating teachings of Eatherton to improve the time synchronization for different slave components in a data packet distribution network taught by Eatherton (*see Eatherton, col 1 lines 13-65).*

Consider claim 18, (Currently Amended) Young discloses an apparatus for operating a point-to-multipoint wireless communication network, said apparatus comprising:

a delay counter that measures link delays between an access point and plurality of stations (*Young, the abstract, col 2 lines 30-48, col 5 lines 4-9, col 7 lines 35-45, 802.11 DCF mechanism monitoring overall network conditions of number of transmissions, receptions, collisions in a wireless LAN);*

a MAC layer processor that calculates time slot value based on said measured delay, distributes said measured delays within said point-to-multipoint wireless communication network (*Young, col 2 lines 35-45, col 4 lines 60-67, col 5 lines 25-35*), uses said measured delays to coordinate transmissions and reduce the probability of collision in a CSMA/CA scheme (*Young, figure 2, col 1 lines 35-40, col 5 lines 35-40, 50-67),* and aligns contention timing boundaries based on said measured delays (*Young, col 1 lines 35-67, col 2 lines 1-15, col 6 lines 50-67, col 9 lines 1-20, a contention window is adjusted based on monitored variables of load conditions of a network),* <u>said contention timing boundaries comprises adjusting a network allocation vector (</u>*Young, col 8 lines 12-26).*

Young does not teach link delays or a common time value. Eatherton teaches a master component distributes and synchronizes a common time value to various components so these slave

components update their respective time counters based on received time counters and time delays between the slave components and the master components (*see Eatherton, col 3 lines 58-67, col 4 lines 1-6*), therefore it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify teachings of Young by incorporating teachings of Eatherton to improve the time synchronization for different slave components in a data packet distribution network taught by Eatherton (*see Eatherton, col 1 lines 13-65*).

Consider claim 19, (Currently Amended) Young discloses an apparatus for operating a point-to-multipoint wireless communication network, said apparatus comprising:

means for measuring delays between a root bridge and a plurality of non-root bridges (*Young, the abstract, col 2 lines 30-48, col 5 lines 4-9, , col 10 lines 45-67, col 11 lines 1-3, 802.11 DCF mechanism monitoring overall network conditions of number of transmissions, receptions, collisions in a wireless LAN*);

means for using said measured delays to coordinate transmissions and reduce the probability of collision in a CSMA/CA scheme (*Young, col 1 lines 55-64, col 2 lines 30-48, col 6 lines 50-67, col 7 lines 1-5, col 10 lines 45-67, col 11 lines 1-3*), wherein means for using comprises means for calculating a time slot value based on said measured delays and distributing said measured delays and said time slot value within said point-to-multipoint wireless communication network (*Young, col 1 lines 35-67, col 2 lines 1-15, col 6 lines 50-67, col 9 lines 1-20, a contention window is adjusted based on monitored variables of load conditions of a network*), and means for aligning contention timing boundaries based on said measured delays (*col 4 lines 25-45, col 8 lines 55-67, col 9 lines 10-20, col 10 lines 1-40*), <u>said contention timing boundaries comprises adjusting a network allocation vector (</u>*Young, col 8 lines 12-26*).

Young does not teach link delays or a common time value. Eatherton teaches a master component distributes and synchronizes a common time value to various components so these slave components update their respective time counters based on received time counters and time delays between the slave components and the master components (*see Eatherton, col 3 lines 58-67, col 4 lines 1-6*), therefore it would have been obvious to a person of ordinary skill in the art at the time of

the invention was made to modify teachings of Young by incorporating teachings of Eatherton to improve the time synchronization for different slave components in a data packet distribution network taught by Eatherton (*see Eatherton, col 1 lines 13-65).*

Consider claim 20, (Currently Amended) Young discloses a computer-readable medium storing computer executable instructions for operating a point-to-multipoint wireless communication network, said instructions comprising:

code that causes measurement of said link delays between a root bridge and a plurality of non-root bridges (*Young, the abstract, , col 2 lines 30-48, col 5 lines 4-9, , col 10 lines 45-67, col 11 lines 1-3, 802.11 DCF mechanism monitoring overall network conditions of number of transmissions, receptions, collisions in a wireless LAN)*; and

code that causes use of said measured delays to coordinate transmissions and reduce the probability of collision in a CSMA/CA scheme (*Young, col 2 lines 35-45, col 4 lines 60-67, col 5 lines 25-35*);

wherein said measured link delays is used in calculating a time slot value based on said measured link delays (*Young, col 2 lines 35-45, col 4 lines 60-67, col 5 lines 25-35)*, and distributed along with said time slot value within said point-to-multipoint wireless communication network (*Young, col 1 lines 35-67, col 2 lines 1-15, col 6 lines 50-67, col 9 lines 1-20, a contention window is adjusted based on monitored variables of load conditions of a network)*; and

code that causes alignment of contention timing boundaries based on said measured delays and said time slot values (*Young, col 1 lines 35-67, col 2 lines 1-15, col 6 lines 50-67, col 9 lines 1-20, a contention window is adjusted based on monitored variables of load conditions of a network*), <u>said contention timing boundaries comprises adjusting a network allocation vector (</u>*Young, col 8 lines 12-26).*

Young does not teach link delays or a common time value. Eatherton teaches a master component distributes and synchronizes a common time value to various components so these slave components update their respective time counters based on received time counters and time delays between the slave components and the master components (*see Eatherton, col 3 lines 58-67, col 4*

lines 1-6), therefore it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify teachings of Young by incorporating teachings of Eatherton to improve the time synchronization for different slave components in a data packet distribution network taught by Eatherton *(see Eatherton, col 1 lines 13-65)*.

Consider claim 5, (original) The method of **claim 1**, Young, as modified by Eatherton, further teaches wherein measuring and using are performed by said root bridge *(col 1 lines 40-45, col 5 lines 20-34)*.

Consider claim 6, (original) The method of **claim 1**, Young, as modified by Eatherton, further teaches wherein measuring and using are performed by one of said non-root bridges *(col 4 lines 50-60, col 7 lines 20-43)*.

Consider claim 7, (original) The method of claim 1 Young, as modified by Eatherton, further teaches wherein using comprises:

assigning transmission deferral times to said non-root bridges based on said measured link delays to give access preference to more distant ones of said non root bridges *(col 5 lines 40-50, col 6 lines 52-67)*.

Consider claim 14, (original) The apparatus of **claim 10** Young, as modified by Eatherton, further teaches wherein said node is said root bridge *(col 1 lines 20-35)*.

Consider claim 15, (original) The apparatus of **claim 10** Young, as modified by Eatherton, further teaches wherein said node is one of said non-root bridges *(col 1 lines 20-35)*.

Consider claim 16, (original) The apparatus of **claim 10**, Young, as modified by Eatherton, further teaches wherein said MAC layer processor assigns transmission deferral times to said non-root bridges based on said measured link delays to give access preference to more distant ones of said non-root bridges *(col 2 lines 35-45, col 4 lines 60-67, col 5 lines 25-40, col 5 lines 40-50, col 6 lines 52-67)*.

Consider claim 21 (Previously Presented): The method of claim 1 Young, as modified by Eatherton, further teaches wherein coordinating transmissions comprises adjusting a network allocation vector time *(see col 8 lines 25, col 9 lines 47-52)*.

Consider claim 22 (Previously Presented), The method of claim 1, Young, as modified by Eatherton, further teaches:

receiving a disassociation request message from one of said plurality of non-root bridges *(col 8 lines 12-36, col 9 lines 1-20, col 10 lines 8-9);*

deleting the non-root bridge from a non-root bridge list (*col 4 lines 27-60, col 8 lines 12-36, col 9 lines 1-20, col 10 lines 8-9);*

updating said common time slot value (*col 2 lines 35-45, col 4 lines 60-67, col 5 lines 25-35);* and

distributing said updated time slot value to said plurality of non-root bridges (*col 2 lines 35-45, col 4 lines 60-67, col 5 lines 25-35).*

Consider claim 23, (Previously Presented) The method of claim 1 Young, as modified by Eatherton, further teaches:

receiving an association request message from a new non-root bridge that wants to join the point-to-multipoint wireless communication network (*col 8 lines 12-36, col 9 lines 1-20);* and

measuring delays between said root bridge and said new non-root bridge (*col 2 lines 35-45, col 4 lines 60-67, col 5 lines 25-35).*

Consider claim 24 (Currently Amended), The apparatus of claim 10, Young, as modified by Eatherton, further teaches wherein said link delays are measured based on departure <u>time</u> of Request to Send <u>frame</u> and <u>arrival time of</u> Clear to Send frames (*see col 8 lines 10-25).*

Consider claim 26 (Previously Presented), The apparatus of claim 18 Young, as modified by Eatherton, further teaches wherein the MAC layer processor is configured to set a network allocation vector of each set of multiple access collision avoidance packets (*see col 8 lines 10-25, col 9 lines 10-20, 45-67, col 10 lines 1-18).*

Consider claim 27 (new), Young, as modified by Eatherton, further teaches the apparatus of claim 18 wherein said link delay counter tracks a time between transmitting a Request to Send (RTS) frame and receiving a Clear to Send (CTS) frame and calculates said link delay by subtracting a value for said RTS frame, said CTS frame and processing time (Young, *col 2 lines 30-48, col 5 lines 4-9, col 7*

lines 35-45, col 8 lines 10-25).

Consider claim 28 (new), Young, as modified by Eatherton, further teaches the method of claim 1 further comprising computing a network allocation vector timer value utilizing point coordination function interframe spacing at the root bridge, wherein said non-root bridges utilize distributed coordination function interframe spacing (*Young, col 5 lines 35-50, col 7 lines 50-67, col 8 lines 1-55).*

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUY C. HO whose telephone number is (571)270-1108. The examiner can normally be reached on Monday - Friday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on 571-272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Huy C Ho/
Examiner, Art Unit 2617

/Patrick N. Edouard/
Supervisory Patent Examiner, Art Unit 2617